

Fop lab manual 10:

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task 1:

```
#include<iostream>
#include<vector>
using namespace std;
int main(){
    vector<int>vec;
    for(int i=0;i<10;i++){
        vec.push_back(i*2);
    }
    cout<<"the pushed integers are ";
    for(int i=0;i<vec.size();i++){
        cout<<vec[i]<<" ";
    }
    cout<<endl;
    vec.push_back(5);
    int positionToRemove=9;
    if(positionToRemove>=0&&positionToRemove<10){
        vec.erase(vec.begin()+positionToRemove);
        cout<<"the pushed integers after removing the element at the given
position are "<<" ";
        for(int i=0;i<vec.size();i++){
            cout<<vec[i]<<" ";
        }
    }
    else{
        cout<<"the given position is invalid ";
    }
    return 0;
}
```

```
/tmp/wNeFfuJ1qv.o
```

```
the pushed integers are 2 4 6 8 10 12 14 16 18 20
```

```
the pushed integers after removing the element at the given  
position are 2 4 6 8 10 12 14 16 18 5 |
```

task 2:

```
#include<iostream>
#include<vector>
#include<string>
using namespace std;

int main(){
    int pair;
    cout<<"enter the number of pairs for the names of the student and the  
grade "<<endl;
    cin>>pair;
    vector<string> names(pair);
    vector<int> grades(pair);
    cout<<"enter the names "<<endl;
    for(int i=0;i<pair;i++){
        cin>>names[i];
    }
    cout<<"enter the grades "<<endl;
    for(int i=0;i<pair;i++){
        cin>>grades[i];
    }

    cout<<"entered names are "<<endl;
    for(int i=0;i<pair;i++){
```

```

        cout<<names[i]<<","<<" ";

    }
    cout<<endl;

    cout<<"entered grades are "<<endl;
    for(int i=0;i<pair;i++){
        cout<<grades[i]<<","<<" ";

    }
    double mean,sum= 0;
    for (int i = 0; i < pair; i++) {
        sum +=grades[i];
    }
    cout<<endl;
    cout<<"the mean of the grades is "<<" ";
    mean=sum/pair;
    cout<<mean<<endl;

    double median;

    if(pair%2!=0){
        int med=(pair/2);
        cout<<"the median of grades is "<<grades[med]<<endl;

    }

    else{
        int med1=pair/2;
        int med2=(pair-2)/2;
        cout<<"the median of the grades are "<<grades[med2]<<" &
"<<grades[med1]<<endl;
    }

    int mode,currentCount=1,maxCount=1;
    for(int i=0;i<pair;i++){
        if(grades[i]==grades[i+1]){
            currentCount++;
        }
        else{
            if(currentCount==1){

                cout<<"there is no mode of the grade"<<endl;
                break;
            }
        }
    }
}

```

```
        if(currentCount>maxCount){
            maxCount=currentCount;
            mode=grades[i];
        }

    }
    if(currentCount!=1){
        cout<<"the mode of grades is "<<mode<<endl;
    }
    cout<<"the names of the students with mode as their grade are as follows
"<<endl;
    for(int i=0;i<pair;i++){
        cout<<names[i]<<" has grade "<<mode<<endl;
    }
}
```

Output

Clear

```
/tmp/o5aLPFqKNG.o
```

```
enter the number of pairs for the names of the student and  
the grade
```

```
3
```

```
enter the names
```

```
ali
```

```
fahad
```

```
ramiz
```

```
enter the grades
```

```
3
```

```
6
```

```
6
```

```
entered names are
```

```
ali, fahad, ramiz,
```

```
entered grades are
```

```
3, 6, 6,
```

```
the mean of the grades is 5
```

```
the median of grades is 6
```

```
there is no mode of the grade
```

```
the names of the students with mode as their grade are as  
follows
```

```
ali has grade 0
```

```
fahad has grade 0
```

```
ramiz has grade 0
```

```
|
```